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Haverhill Aqueduct Company

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DELIVERED BEFORE THE JOINT SPECIAL COMMITTEE OF
THE HAVERHILL CITY GOVERNMENT,
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REPLY OF THE HAVERHILL AQUEDUCT COMPANY TO ITS ASSAILANTS.

MR. MAYOR, AND GENTLEMEN OF THE COMMITTEE,—
The Haverhill Aqueduct Company has come before the committee as an observer and a participant in these proceedings, not to throw any obstacle in the way of the consideration of the plain business proposition of a purchase by the city, but, in the first place, on account of the extraordinary language of the petition filed with the City Council, proposing an investigation of “the methods of business and procedure” of the company, and because of the notorious hostility of the prominent instigators of this movement; and, secondly, to repel expected attacks upon the company. Moreover, it was a courtesy due to the representatives of the city, after being duly informed of the pendency of the hearing. It is deemed by the company that it is privileged to refute all charges preferred against it, and that it is its duty to assist the committee by furnishing proper and legitimate information for its guidance, as well as to expose any propositions calculated to mislead or prejudice the committee or the public against the Aqueduct Company. The presumption of certain of the petitioners at the outset, in peremptorily demanding a personal inspection of the affairs, accounts, and books of the company, is a fit companion to the audacious and dishonest assumption of statement, and impertinent and prying disposition, manifested from the beginning. When it is recalled that the selected mouth-piece at these hearings is a litigant in numerous suits-at-law now pending, and has more on hand, and is full of enmity towards the company, and his assistant is his paid attorney in all these disputes, the preposterous impudence of this original claim can be thoroughly

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appreciated. As to the remaining petitioners, it is likely that new light will reveal to many of them their ridiculous attitude; and it may be said of them in excuse, that they did not understand the position the *animus* of others was leading them into.

The offer of the company to the committee, affording every opportunity of inspection for gaining information, and ascertaining the history and condition of affairs of the company, was made unreservedly. For it is as much in the interest of the company to have a revelation of truth to the committee, after the misstatements made before it by the petitioners, as it is for the committee. A corporate existence of honor for eighty-two years can await with composure the effect of the bites and stings of snarling foes, and look for vindication in any searching of its acts.

In weighing the matters which are submitted to you, it is trusted that you will consider the source, the manner in which they are presented, and likewise give due consideration to the *animus* which impels this movement.

It has been deemed necessary to point out to the committee, that the petitioners represent no considerable body of the citizens of Haverhill; and that they are so prejudiced by personal hostility, as to be unfit to judge what is for the best interest of the city. The assumption of candor in the argument of the petitioners is calculated to mislead, unless its true inwardness is exposed. It has been thought proper to make such strictures upon the motives of the petitioners as shall place all the facts in the hands of the committee, and enable them to see that a desire to despoil individuals of their property by representing it as of little or no value, and not a wish to benefit the city, lies at the bottom of the whole question. While questioning the right of these gentlemen to arraign the company, nevertheless a direct refutation of all the false charges made against it is here offered.

The solicitude of these men for the public is instructive; and it is a refreshing symptom to behold railroad and bank directors, and directors of gas-companies, all extensive owners, posing as champions of public interests, and prating against what they see fit to style and berate as a monopoly. One would fancy that a private water-company was a new monstrosity, and that the knowledge of the existence of

hundreds of them in the country had not yet been revealed. Enterprise has developed such business, and afforded ample opportunities for satisfying the thirsty needs of a community, where others doubted and tax-payers shrunk, as much as in every other undertaking connected with modern life. The sole question is, whether a satisfactory and economic service is rendered; and that system which accomplishes this is the one to be chosen. If, all things considered, a municipality can do it, well and good. Experience, however, does not justify that conclusion. If a private company can do it better and cheaper than in any other way, then the public is best served. It is a practical question, and the true economic position is as stated. The law is abundantly elastic and powerful to prevent any encroachment on public rights, or oppressive acts. The company is at all times amenable to the controlling power of the law. It is idle and ridiculous for the statement to be made to the contrary. A public franchise is always subordinate to the courts.

As this controversy has progressed, and the positions of these agitators have been taken, one stands almost abashed in their presence, "and feels how awful goodness is." But the import of the facts and figures served up by them is so entirely erroneous and grossly misleading, that the mask of this stern goodness must be torn away, and the deceit beneath uncovered.

At the beginning, you will remember, your attention was invited to one who had given twenty years to the study of aqueducts, and had investigated in that time nearly, if not all, the aqueduct systems in New England. It was a becoming flourish of the trumpet before the curtain was raised, and the familiar faces, with the same old stories, were discovered, and the same old star-performer, with his old "tag," and the regular stock company of attendants, was introduced to our attention. Having contented himself by his self-indorsement, and qualified himself to his own satisfaction, — an easy task, — the leading petitioner proceeded as an expert on aqueduct law and systems, and an amateur hydraulic engineer, before our wondering gaze. It is evident now, that he was selected, or volunteered to assume the post, not for having more personal experience, but as having more personal hostility. It can be said of his special education, that his time has been

wofully misspent, or he has proved to be an extremely dull scholar.

It is necessary to modestly place the practical experience of years, and almost a lifetime, against this exalted and self-esteemed experience of twenty years, confused as it must have been with attempts at fathoming the known and the unknown, both at home and abroad, occasionally trespassing in a neighboring garden for a few faded flowers of literature, and, withal, making doubtful empiricism the successful reaper of the substantial fruits of life. It is not strange that there was no opportunity to find more than a new title for a stale literary product, which was sought to be palmed upon the public as new and genuine until detected by the merciless critic of a public journal, and condemned as a proceeding of questionable ethics. And it is now not surprising, in this last public exhibition, that the extent and influence of his past career has driven him on in a course of doubtful propriety. It will be shown to your satisfaction, that even in this public place, where the responsibility cannot be avoided, there has been no hesitation to bend and twist the truth to serve a selfish, malicious purpose.

THE HAVERHILL AQUEDUCT COMPANY.

The early history of the company has been narrated to you; and the tale exhibits the zeal of an antiquarian, with the imagination of a composer of fiction. Holy relics are said to be in existence in excess of the original articles, and the authors of the pious frauds would have found a congenial companion in the fabricator of this fictitious statement. The expert author never had access to the authentic records or books of the company, nor any other original sources of inquiry, and has not even entered its offices for seventeen years. Some leading facts, like the existence of the ponds, became at some time known to him; and the powers of invention, with the inventor's sonorous tones, have done the rest. It is hardly worth while to review this immaterial part of the subject; but, inasmuch as here are found the first misstatements, passing attention is given to them. In 1802 the company was formed, and it is highly gratifying to know that the pine logs were bored with "a long two-inch auger." It is to be regretted that we are not informed by this scien-

tific gentleman why our ancestors used a two-inch auger in preference to one of two inches and a fraction, more or less, nor how much the boring cost. But it may be worth the saying, to state that the first price for water was not two dollars a year for houses and beasts. It was four dollars and a half, provided subscription for taking water was made before the logs were laid, otherwise it was to be five dollars; and an extra charge was made for each additional post: and Mr. David How, to whom reference has been made, was charged nine dollars. The prices for water varied somewhat, till 1845, when a uniform tariff was made for the ordinary family use; and the rate has not been changed since that time. Water, therefore, has not increased so much in value as the other articles and necessities of modern times.

Like the old landmarks, the log aqueduct long since passed away; and its history is no longer profitable. The corporation survived from 1802, and has developed to its present condition. In its early life its existence was most precarious. Its earnings were very small, and less than its expenses. As the system extended, the expenses exceeded the income; and under the present management, for many years, it was seemingly a losing venture. But few dividends were paid; and assessments made, vastly exceeded the dividends. Nearly all the earnings went into the ground, together with a large amount of money raised in the ordinary and proper way. In the mean while, the task was a thankless one. The community viewed the venture as chimerical, and the individuals engaged in it as foolhardy in the extreme. The town scoffed at the idea; and the multitude believed that there was then, and there was little chance that there ever would be, any use for such a contrivance as an aqueduct. The members of the company lost their financial standing with the money-lenders; and their determined efforts only made them objects of pity to their friends, who hoped the infatuation would be short-lived. Who can now say how much the existence of the facilities for water, afforded through the past history of the town and city, has contributed to its progress and present prosperity? If at all, then the company is entitled, at least, to some credit, and does not deserve the vituperative assaults made upon it. During all this time, there has been no burden

upon tax-payers when they could least afford it, especially at a time when they were weighed down by a constant and an increasing indebtedness, arising from the war and municipal necessities.

The relations of the shareholders to the company, their contributions to its growth; the expenditures through its history, whether by assessment or otherwise; the income; the development of the company's system; the existence of the company's books, a fact always tauntingly disputed by these men,—can be readily learned by the committee, and, by a proper examination, all important and necessary matters disclosed. You are repeatedly told that there are no books: this has been the slanderous tale of years. The evidence of your eyes as to these matters is the proof submitted to you, the seeing and touching, which will overthrow the gratuitous falsehood. These facts are for you, gentlemen of the committee, but not for the inquisitive Paul Prys, who hope to gratify their spirit of curiosity. This information is open to the city; and it may be now stated and clearly understood that the Haverhill Aqueduct Company will never pass into the hands of strangers, or other than the city of Haverhill.

As the investigation progresses, undoubtedly some views will be obtained as to the cost of an extensive aqueduct system like this for large cities and places like Haverhill. Comparison has been heretofore made, and the relation will be continued, with other cities, besides those already mentioned. But little dependence can be put upon the figures before given you, as examination of the official documents will show that they are inaccurate.

COST OF WATER-WORKS IN OTHER CITIES.

In order that some notion may be gained of the cost of constructing works similar to those of Haverhill, the following examples will be of service. In 1869, when the Salem water-works were in a condition to give a supply to the city, the cost was \$1,096,422.59. From this the cost of the reservoir may be taken, which was \$127,652.28; and there is left the sum of \$968,770.31 for the remainder of the system, which is in almost every particular similar to the one in this city. The distance of the source of supply is only four and six-tenths miles from the city-hall of Salem, not much farther

than Crystal Lake, which it is now proposed to make use of. The population of Salem is not much greater than that of Haverhill. In Lawrence, under the same conditions, the cost was \$1,192,967.84; and after subtracting the cost of the reservoir, \$275,151.44 (not \$1,000,000, as stated by Mr. Abbott), there was remaining the sum of \$917,816.40; and in this instance the water is close at hand. The works were not completed at this price. In Lowell the net cost of the works Jan. 1, 1884, was \$2,350,179.21. In Lynn, the net cost at the same time, not including the new supply, was \$1,088,192.95. None of these appear to be self-sustaining, the tax-payers contributing in different ways to their annual support; and the net cost of each has steadily increased each year. The cost of the high service alone in Haverhill was about \$100,000, and, it is believed, could not be replaced for \$150,000. It is a pertinent fact to be noticed, that the cost of reservoirs, about which so much is said, is but a small share of the whole expense.

It is amusing, at least, under this head, in the printed argument presented to the public, to find a certificate of character, as it were, granted to the Wakefield works, which has pipes cement-lined, exactly like some of the pipes laid in Haverhill, made by the same man, and which are slurred at on every occasion, and generally spoken of as an instance of incompetent construction. The new 12-inch pipes of this kind, lately laid by the company, were all made in Wakefield, and shipped from that point to Haverhill. This allusion is made to point out the *animus* of the principal assailant on all matters touching the Haverhill Aqueduct Company.

COST BY ESTIMATE.

In the absence of any definite or accurate knowledge, the cost is guessed at by another process. It is done by estimate. It may be that the hope is entertained that the random shot will bring out an authoritative and detailed account. As has been intimated, that is not necessary for this occasion. The speculative effort does not appear to be a happy one. The figures given are \$138,500 for an aqueduct fully supplied. In 1879 this same gentleman, who has assured you, and also a dignified committee of the Legislature, that he has extensively examined water-works, both in this country and in Europe,

publicly informed the citizens of Haverhill, that, for \$80,000, "an aqueduct, first class in every particular, could be constructed, and no repairs to be made for a quarter of a century." With the estimate now given, it is asserted that the cost of iron pipe was never lower than at the present time. In 1879 it was declared that the cost of pipe was \$26 per ton. In fact, the price of pipe now is about the same as when the city made a large purchase for itself in 1883, paying about \$43 per ton. This estimate is a bubble, and breaks at the first breath. But a foam-bell or two of misstatement has not distressed this expert in treating this subject. Fortunately, there is an instance of construction and cost close at hand, and, therefore, more readily appreciated. The elaborate argument of the petitioners on p. 11 shows that the result is based on certain calculations. It is made to appear that the cost of 12-inch pipe, delivered and laid down, would be \$9,398 per mile, or \$1.78 per foot. According to this, the cost of the pipe recently laid by the city should have been \$14,240. Now, this work has been accomplished at our very doors within a few months. It was extremely well done under the exacting supervision of Mr. Mansur, recently appointed superintendent of streets, and probably at a minimum cost. The whole cost was exactly \$30,209.54. The cost of laying the pipe was about \$28,209. This length of pipe was less than two miles, — about 8,000 feet. That is, it cost twice the figures given, and at the rate of almost \$4 per foot. So the estimate fails at the first touch. But, if he is correct, has not this conservator of public interests permitted a golden moment to slip by, when he might have been the cause of saving to the city treasury nearly \$16,000? Of what use is the keenness of one devoted to the public welfare unless it can be available at a critical moment like this?

If the company has built an aqueduct, which in all its appointments, for fulness of supply, and purity of water, is unsurpassed, for one-half of what it has cost our neighboring cities, does he not give the company credit for an ability in construction which he did not intend? It ought to be satisfied at this; but if it has been able to do the work for one-tenth of the cost of construction in other places, as his figures indicate, then the company has accomplished a feat which ought to attract the attention of aqueduct constructors everywhere.

It is quite evident, that a knowledge in hydraulic engineering and aqueduct construction, which is assumed, is likely to prove very deceptive if followed.

In the report of the year 1881 of the Portland Water Company, there are found these words: "It has been the experience of *all cities* in bringing water into the city of nearly doubling in actual cost the first estimate." This is a rule of general application. This company has a financial history of great interest to the people of Portland. The petitioners may have built better than they knew if this hearing reveals to the people of Portland, by the disclosures and comparisons made here, facts which will confer a benefit upon that community. And the perturbation of the vice-president of the company indicates that the spirit of inquiry is abroad there, and that there is anxiety to know why their charges are higher than in almost every place in New England, and why the laws for their protection are not enforced. Those interested in the Portland works are now engaged in constructing similar works in Biddeford and Saco; and, in public negotiations with the government of that city, the treasurer of the company stated that the tariff would be about the same as in Portland. Mr. John P. Gilman, one of the petitioners and vice-president of the Portland company, and also president of this new company, stated to your committee that this was not so; but the public, printed statement of Mr. Westcott, the treasurer, is as good authority the other way. The water-works at Biddeford cannot compare with the works at Portland in cost, so that the excuse of costly construction cannot be used in justification; and the deduction to be made is, that original expense of building does not necessarily fix the rates. With these remarkable rates pouring their golden stream into the pockets of the owners, it does not lie in the mouth of one of them to make complaint against a company with far more humanity; and you will find that there must be other reasons for his position. Examples will be given of the extortionate Portland rates. The petitioners may be unwittingly instrumental in gaining some good, in benefiting the unfortunate water-takers of Maine; and thus their mission will not be in vain.

There are not wanting numerous cases to prove the rule of construction set forth above. The estimated cost of the

works in Salem, as made by Mr. Slade, an engineer of national reputation, was \$497,332: the actual cost Dec. 1, 1883, was \$1,413,160.54. The estimated cost of the Lawrence works was \$864,067: the total cost Jan. 1, 1884, was \$1,803,758.46, and not \$1,762,832.24, as erroneously stated. In Lynn the first estimate in 1870 was \$272,345: the cost Jan. 1, 1884, was \$1,136,408, exclusive of the new supply. This was estimated at \$77,605, and \$100,000 has already been expended. The works are not yet completed. Lowell presents the same instructive lesson, but the first estimate is not at hand. The first report in 1874 shows the cost then was \$1,542,630.88; and the net cost on Jan. 1, 1884, was \$2,350,179.21, and not \$1,700,000, as incorrectly stated, — an increase of cost since 1874, of \$807,548.33. Other places repeat the same story. In most of them large sums have been annually appropriated, which do not appear in the cost, from the levied taxes, to swell the income, make up deficiencies, and establish a sinking-fund. The sinking-fund is almost invariably fed by taxation. Incidentally, it may be mentioned that the large appropriations for the municipal departments, all of which come directly from taxation, should be debited to the cost of water.

WATER LEGISLATION AND THE RELATIONS BETWEEN THE COMPANY AND THE CITY.

It is useless to repeat the history of early contests before the General Court, which aroused great personal vindictiveness, when, under the disguise of public spirit, personal antipathies were manifested. The latest controversy will demonstrate all that is pertinent to this inquiry. The relations of the company and the city are properly to be considered here. Considerable comment has been made, and it has been the constant aim to prejudice the company, because of the successful efforts of the company in securing needful legislation. In these contests new agencies have been employed to secure allies, and wage the war. It is a rare thing in New England for a great railroad corporation to be employed as a factor in carrying on a private personal quarrel. Free passes over the Boston and Maine Railroad, almost by the wholesale, have had their natural influence in cementing

the strength of the petitioners. The noted places of resort in New England, from Rangeley Lakes to the lakes and mountains of New Hampshire, and the busy streets of Boston, have enjoyed the presence of those privileged with free rides, participants in this palpable "discrimination in rates;" and, in return, the recipients contribute their presence and influence in a raid against the Aqueduct Company. The free privilege of the road is extended to those employed in taking care of the legislative end, and all volunteer allies have the same privilege as a price for their encouragement. This is clearly an abuse of official position and a "dangerous discrimination" in the tariffs, to which the attention of the railroad commissioners should be at once directed; and the shareholders ought to be informed how the property and earnings of the road are being employed. So high have been the regular rates for passage on this road, as paid by the citizens of Haverhill thus discriminated against, and so unjust has been the discrimination in the matter of freight rates, that it is verily believed that a large section of the road is owned by the city "in equity, if not in law." To show that this solemn doctrine of equity has the sanction of the petitioners, reference is made to printed argument of the petitioners at p. 8.

It has been the endeavor to lead the public to believe that reckless, ruinous attempts were being made to destroy the ponds, and compel the water-takers to use impure water.

These ponds are the natural water-fountains of Haverhill, of remarkable purity and great resource. They possess a supply of pure water, including Crystal Lake, for at least fifty years, if, indeed, they are not practically inexhaustible. In the exceptional dry seasons of the past few years, which imperilled the water-supply of all New England, of necessity the ponds were drawn down, to meet the needs of the people. Still, when every spot was on the verge of a water-famine, and New York, Boston, and Lynn had a supply for only twenty days, by exact computation Haverhill had a continuous supply of pure water for eight months. Should the supply have been stopped, and the people taken their pails and buckets to the river? Nature for the time had refused her regular and annual supply; and, in order to meet the public exigency, the water in Kenoza Lake was drawn forty-four

inches below the highest point it had reached in the spring of 1883. It was deemed advisable to secure such legislation as would place the water-supply of Haverhill on the same plane as all other water-companies in the State. The existence of water-mark legislation was a fruitful excuse for litigation to those mischievously inclined. Land-owners and property are abundantly protected by the law without such provisions. Moreover, as will appear, the disposition of a land-owner at Kenoza Lake showed that some change would be needed for the public interest. The public had as deep an interest as the company. If a public exigency for water exists, it ought to be taken without the possibility of individual petty annoyance. No restrictions as to water-marks are ever made now. It is left to the judgment of the water-company, and subject to the public requirements. The persistent contention by the inspirer of all the trouble is, that there is but a slight margin between the points where water can be raised or drawn at Kenoza Lake, and that, practically, the law allowing the company to take water from Kenoza Lake is inoperative. If the city should succeed to the company's rights, it will be seen at once that it would be in the same predicament. If either control the water, the wants of a large community must be uninterruptedly satisfied. It was to prevent the people at any time from being subject to the vindictive caprice of one man, whose bickering spirit might cause trouble to the entire city, that additional legislation was asked, to remove any possible source of annoyance. It was so understood by the Legislature, and a law was enacted to meet the case presented.

Let us see whether the attitude of the principal petitioner has always been unselfish, and for the public good ; and let us consider for a moment what would have been the consequences of his efforts within four years, if he had been successful.

Haverhill has at her command but one source of supply of pure water, for domestic and fire purposes. For four years, and up to 1884, Kenoza Lake has been the chief source of supply; the water being pumped into Round and Plug Ponds, and thence distributed. If this source had been cut off, portions of the city connected with the high service would have been entirely deprived of water, and the entire city parched

with thirst in a few days. If low-water mark had been established, as claimed, during this time, Kenoza Lake, with an area of two hundred and thirty-four acres of water, would have been unavailable. In 1880, one of the years of the dry season, the leading petitioner sought the courts to enjoin the further use of Kenoza Lake (claiming then that low-water mark had long before been reached), and thus cutting off the supply. His lamentation was solely personal; and his wail was for the loss of the "cascades" and fountains on his experimental farm, as described in his bill in equity, which, unhappily, were only of paper existence, and would not be generally accepted as of much public benefit. The attempt has thus far failed. If he had succeeded, would not his very name have been hooted and execrated? Would he have dared to lift his voice in this presence?

What further interest had the people in this question? It became imperative to increase the water-supply for fire-purposes in the business portion of the city. Accordingly, there was expended over thirty thousand dollars for pipes and hydrants, on a plan publicly suggested by the treasurer of this company, a number of years ago; and the company contributed the benefit of its high service, wholly dependent on Kenoza Lake, for this special object, also pumps, power, fuel, men, and a constant pressure of water, night and day, *free of any expense*. The company is not bound to do this. By this same gentleman it is contended that "low-water mark" is reached by August in each year; and if he had succeeded, or should ever succeed, in maintaining the ground he takes about what he sees fit to term "his lake," water could not be taken, except when the water is above "low-water mark:" and at every dry season, and any lowering of the water from that and other causes, the new fire-extinguishing power would be useless, and the *whole business portion* of the city exposed to a second destruction. Not one of the new fire-hydrants, nor any hydrant connected with the high service, would be available to avert disaster. Ownership by the city would make no difference, — the city could have no greater privilege. The insurance companies at once would bring this subject home to you, by touching your pockets. Every effort has been made by this same person to make the possibility referred to a terrible reality, which might annoy or cripple

a striving community. This, assuredly, was blind prejudice and selfishness, not public spirit. The practical wisdom of the water-committee of the Legislature was greater than the paraded, so-called science of the opposition, and a practical cure of a possible evil, afforded; and now the city, whether owner or not, will enjoy the amplest protection. The company, in order to protect the ponds near the city as much as possible, and Kenoza Lake especially, sought Crystal Lake as a further supply, asking for that and other needed legislation, and *volunteering* that it should be conditioned on going to Crystal Lake within the time necessary to construct the required works. Still, it is even now falsely persisted that the company's movement in that direction was a blind, and the most mercenary motives are insinuated.

PURITY.

It is charged that the management of the company has been so poor that the ponds are in danger of destruction, and that the waters are impure, and unfit for use. Here science selects its own ground. It may seem presumptuous to venture to trespass upon the special prerogative of a petitioner, who also understands all about the aqueduct systems of the world. However, there are reasons for confidence in stating that this is only a little ballooning in science, and that a slight puncture will explode the distended fabric. It is observed that the attack on the company, in its treatment of the ponds, shifts from time to time from one untenable position to another. In 1879 this gentleman informed us that "the low-water mark was designed to protect the interests of the owners of property upon the shores, and also to save from destruction the ponds." The ponds not submitting to destruction on account of the acts of the company, as predicted in 1883, low-water mark was said to be in 1884, for the purpose of preventing "low-stage impure waters" from being delivered to the people. The first ground, undoubtedly, was abandoned because it betrayed too much personal interest. In 1879 this same gentleman, with profound wisdom, informed us that "the waters of the beautiful ponds around our cities are held in place only by a strata of blue clay, shale, and grits. This strata is impervious to water, and holds the contents of the little basins between the hills, as a

saucer holds tea infusion poured into it. Dig through this strata, or allow it to crack in a number of places, and the contents of the ponds would gradually disappear, — the ponds would *no longer exist*. If the company is permitted to draw off the water of these ponds to a low point, the shores become dry and heated, the clay contracts, fissures form in it, and *leaks* are made which *permanently lower* the level of the water. . . . If the pumping from Kenoza is allowed in ordinary dry seasons, that beautiful lake will permanently suffer; and, if the abuse is continued and increased, we may bid farewell to the ponds, which are our pride and boast” (Dr. James R. Nichols, in “Haverhill Gazette” of that year, over a *nom de plume*). And the hills round about Kenoza’s shores have been taught to echo ever since the repeated cry, “It will never come back again!” The basin of the ponds will crack, forsooth, like an old earthen bowl, or have an outlet like a perforated tin kettle, and through the “*leak*” the water will pour to the cavernous depths below! Can there be a vast hole in the interior of the earth, to serve as a receptacle for the leakage? If so, can the petitioner inform us what are its dimensions of depth and breadth? Have we, then, a hole in the earth as a counterpoise to the famous “hole in the sky” of political scientific memory? Or will the water pour through the “leaks” to the land of the antipodes, and, perchance, flood the rice-fields of the Mongolians? But, in the face of this declaration and prophecy of pseudo science, Nature has kindly replenished her stores; and the ponds are now higher than for many years, and Kenoza has a height greater than after the dam was abandoned by Mr. Hale, and before a drop was taken for the use of the company or the city. No examination need be made by the committee to ascertain the cost or scientific manner of stopping the “leaks” in making an estimate of probable price.

The questions of the quantity of water at our command, and its fitness for use, are taken together. They are some of the rotten fagots in the bundle of charges. It has been stated that the limit of these ponds “was reached more than five years ago.” If a fact can be of any service, or carry any conviction, to one supposed, on his own showing, to already possess a marvellous knowledge, the knowledge that practi-

cally no water was taken from Kenoza till 1880, when the high service was completed, may be of value to the petitioner in making another statement.

It was deliberately asserted before the Legislature, that the water now in use for nearly twenty years had become unfit for domestic uses; that the gradual deterioration for the past twenty years was surprising; and that the solid matter contained in an imperial gallon was forty-seven grains, and that twenty years ago it was as low as seven grains. It is now substantially reproduced, and the obvious intent is to charge the company with furnishing impure water. If these waters are pure, and fit for use, they will be taken advantage of so long as they remain pure and healthful. Permission will never be granted that they may remain in indolent, slumbering beauty, to adorn the broad acres of an abutting owner. Kenoza was never intended for such ignoble use.

The quality of the water has ever been of the best; and it has been the boast of our people, that, at all seasons, the purity of the water-supply has suffered little or no variation. If such changes have been going on, according to the deliberate utterance of science as applied to water-subjects, it would be evident now. Repeated analyses (to refute some *doubtful, alleged* ones) made by *competent* persons have only added to the knowledge which the humblest citizen already possessed of its good quality; and it will take more than the unsupported assertion of an analysis of the leader in this attack, and who is not generally known in tribunals of justice, at least, as a skilled expert, to convince the water-takers of Haverhill, with their experience of nearly twenty years, that what they have used so long, and are now using, is impure and unfit.

In the month of February, 1867, when the water in Plug Pond was at a lower stage than ever before or since, having been lowered to set the main, the water was analyzed by A. A. Hayes, State Assayer, with the following result: "One United-States standard gallon contained 3.576 grains of solid matter. It is an excellent water for domestic purposes, and among the best;" also, "and among the best known for general purposes, as they partake of the character of both spring and pond water." A report of an analysis was signed by James R. Nichols & Co., manufacturing chemists, Feb.

7, 1867. This was carefully preserved, not for its intrinsic merit or value, but for such an occasion as this. It showed of solid constituents 3.95 grains to a gallon. The water was said to be of "remarkable purity," and "for all the purposes of household employment, of unusual excellence, holding a less amount of earthy and mineral salts and vegetable matter than is usually found in New-England ponds and rivers." What has been the lesson of time? In 1878 there was some talk about the impurity of the water in Plug Pond; and the Board of Health of the city, Charles E. Wiggin, chairman, caused an analysis April 24, 1878. A report was made by the analyst, S. Dana Hayes of Boston, State Assayer. The amount of solid constituent grains was 3.08 grains for a gallon. It was pronounced "a water of unusual purity in both quality and kind of substances present. It is also purer than the waters supplied to the largest cities of this country." So far, the health of no one is imperilled. In 1884 it became important to study them again. A gallon of Plug-pond water was given to Professor Edward S. Wood of the Harvard Medical School, a gentleman of extensive experience, and recognized as one of the most thorough experts on these matters in the country. This was done as late as possible, so that the analysis might be had in a summer month. On June 13 of this year the analysis showed, that, in the various elements, the change since 1867 was slight: of solids, there were 3.30 grains (in 1867, by Nichols, 3.95; by Hayes, 3.576); and the total organic and inorganic was 5.20 grains, in every respect less apparent impurity than in 1867. Moreover, it was pronounced "an excellent surface water, suitable for drinking and other domestic purposes." That is to say, that, in the course of these years, the water survives a competent test, showing the water not to have changed for the worse. The statements so broadly given indicate either ignorance or wilful perversion, which call for charity, or demand rebuke.

Before the Legislature last winter, it was urged, by those of the petitioners who were there, and chiefly by the so-called scientist of their number, that the people of Haverhill should have been furnished long ago with the water of the Merrimack River, and that this source should be resorted to now, as the water was pure and healthful, and the river "offered

extraordinary facilities for water." It was then asserted, that the only water available in the ponds was the "surplus water" coming from the "winter-snows and heavy spring-rains," which was "exhausted in three months, so that what is properly called low-water mark is reached by July or August of each year;" and that what is drawn from the ponds, except late in winter and in spring, is unsuited to domestic uses, — that for these reasons the people should be driven to take the marvellously pure waters of the river! This has been loudly declared since. It being stated as a scientific proposition, that the water of the river is self-purifying from its flow, and therefore adapted as a substitute for the ponds for domestic purposes, some impression may have been made by these uncontrolled assertions. The condition of the water in the ponds has been already demonstrated.

The water of the river reaches Haverhill under circumstances commonly understood. With a hundred thousand water-closets and sinks, and a hundred thousand urinals, discharging into it; with the drainage of slaughter-houses, and the accumulation of every kind of garbage; with carcasses of animals, and every form of pollution, thrown into it; with the contaminating filth of a multitude of manufactories pouring into it; with the drainage and sewage of numerous large cities and many towns poisoning it, — it is rapidly being converted into a vast, convenient sewer. It requires only the exercise of common sense to satisfactorily dispose of the problem of its fitness for domestic use. If this abuse is unrestrained, the continued use of this water by two of our neighboring cities farther up the stream, already questionable, will soon be a very serious matter.

But we will go farther. This question of the use of river-water, in the condition of the Merrimack, has been the subject of skilful, unprejudiced scientific inquiry, and the popular notions propagated by irresponsible empiricists completely overturned.

The State Board of Health, alive to the questions of water supply and drainage, with the assistance of the most competent experts known, have made a most careful study of this question, and in an exhaustive report say, "It is a widespread popular idea, that no matter how much impurity is discharged into a running stream, yet, by a dozen miles or so,

the stream will, for all practical purposes, free itself from the impurity, and become fit for use, even as a source of water-supply. It has been alleged that the organic matter is almost completely oxidized by the oxygen of the air, and by that dissolved in the water, and that this oxidizing action is very much increased if the water is agitated by passing over weirs and falls: . . . it is, however, unsupported by direct proof; in fact, the experimental evidence leads us to the contrary opinion. The Rivers Pollution Commission (of Great Britain) made this question the subject of direct investigation, and showed very conclusively that the commonly received opinion was erroneous." As a result of the experiments made by the Rivers Commission, they affirm, "It is evident, that, so far from sewage mixed with twenty times its volume of water being oxidized in a flow of ten or twelve miles, scarcely two-thirds of it would be so destroyed in a flow of 168 miles, at the rate of one mile per hour, or after the lapse of a week. In fact, whether we examine the organic pollution of a river at different points in its flow; or the rate of disappearance of the organic matter of sewage when the latter is mixed with fresh water, and violently agitated in contact with air; or, finally, the rate at which dissolved oxygen disappears in water polluted with five per cent of sewage, — we are led in each case to the inevitable conclusion, that the oxidization of the organic matter in sewage proceeds with extreme slowness, even when the sewage is mixed with a large volume of unpolluted water, and that it is impossible to say how far such water must flow before the sewage matter becomes thoroughly oxidized. It will be safe to infer, however, from the above results, that there is no river in the United Kingdom long enough to effect the destruction of sewage by oxidization." And Sir Benjamin Brodie, in his evidence before the Commission, said, "I should say that it is simply impossible that the oxidizing power, acting on sewage running in mixture with water over a *distance of any length*, is sufficient to remove its noxious quality. I presume that the sewage can only come in contact with oxygen from the oxygen contained in the water, and also from the oxygen on the surface of the water; and we are aware that ordinary oxygen does not exercise any rapidly oxidizing power on

organic matter. I believe that an infinitesimally small quantity of decaying matter is able to produce an injurious effect upon health ; therefore, if a large proportion of organic matter was removed by the process of oxidization, the quantity left might be quite sufficient to be injurious to health. With regard to oxidization, we know, that, to destroy organic matter, the most powerful oxidizing agents are required : we must boil it with nitric acid and chloric acid, and the most perfect chemical agents. To think to get rid of organic matter by exposure to the air for a short time is absurd." The State Board, in expressing their own conclusions on this subject, say that they cannot do better than quote the words of Dr. Frankland, the most eminent chemical authority on the sewage question : " There is no process practicable on the large scale by which noxious material (sewage matter) can be removed from water once so contaminated, and therefore I am of opinion that water which has once been contaminated by sewage or manure matter is thenceforth unsuitable for domestic use." The State Board in a most thorough manner tested the quality of the waters of the rivers in the State, and declared that the waters of the Merrimack below Lowell " would not be recommended as a source of a supply for a city." It is to be hoped that this community will hear no more absurd talk about supplanting the use of the pure water of our ponds by the spoiled and polluted water of the river.

INCOME.

It would be unprofitable to follow the speculations as to the income of the company. Idle conjecture is of little or no value. The calculations made are only the vagaries of one who has no trustworthy basis. It is simply untrue, that, in 1867, it was shown at any time or place that the income was \$30,000. This subject has been spoken of before ; and it only remains now to be added, that the records of the company contain an absolute refutation of what has been declared.

But one example has been given of the maintenance in other cities, — that of Lynn. And it may be fairly presumed that it was selected because it best suited the purposes of the person offering it. No notice was taken of the construction and interest accounts, which are alike a part of the yearly

expense. And, as appears in the official report of the year 1882, "the interest charges increase with the yearly increase of the water-debt," — a confession worthy of note. The net cost of Lynn works, up to Jan. 1, 1884, was \$1,088,192.95 exclusive of the new supply; and the cost of maintenance alone in 1883 was \$21,546.14. Why was not this year chosen, unless it was the purpose to pick out a year which gave figures best adapted to the cause of the petitioners? Why was the cost at a certain year selected, and the expense of maintenance for a different one chosen, when the figures ran low, unless it was to manipulate the record for purposes of deception? The net increase of the cost of the works in Lynn for the past year has been \$52,322.52. The increase of the debt thus far is constant. Every thing which relates to this particular can be understood when the details are sought and examined.

WATER-RATES.

In carefully and candidly comparing the water-rates of one place with another, it is difficult to do exact justice. A fair comparison cannot be made between municipal water-companies and a private company, because the water-payer in the last instance gets his whole rate on his water-bill: in the first case the largest part appears on his tax-bill, and his water-bill does not tell the whole story. It is not fair to compare with a single one of exceptional high rates, nor with one of extremely low rates.

In one place, subjects of comparison may be high; in another, the same things low, and *vice versa*. The scale may be, as a whole, very uneven. There may be a greater and more extended variety of rates in different places, materially affecting the aggregate income. The contribution of the municipality to the income, oftentimes a very large sum, unquestionably affects the rates. If it were not for this, in many of the places used as standards of comparison, the rates would be much higher. In these instances, the difference is not visible on the water-bill, as already suggested, but appears on the tax-roll. No effort has been made to get exact acquaintance with the Haverhill rates by any one connected with the petitioners. If they had been as zealous at home as they seem to have been abroad, the result would have been different. A few questions properly directed might have affected

the argument of the petitioners. But justice was not sought : spite controlled. The charges in Haverhill are made throughout as uniform as possible, and it is sought to give a low price for a very liberal supply of water. It is certain, that if our water-takers were compelled to pay the rates of other cities, and had added to their tax-bills an additional rate, their murmurs would be loud and deep. For example, the rates in Salem have not been changed since 1869. They were put very low, and the balance charged to taxation. Every year there has been an appropriation for water-account. When the rates were made, it was said by the chairman of the water-board, Hon. Willard P. Phillips, when he formally passed the works to the city, Gen. Cogswell, mayor, "The city council have fixed what are mere *nominal* rates, as the rates which will yield the greatest revenue: meanwhile, therefore, our citizens must pay in taxes this deficiency in revenue, which is equivalent, with our present valuation, to a tax of \$3.25 per \$1,000." This has continued through these years, subject only to the changes of valuation. The official communication from Salem to this scholar in aqueduct matters, when he was preparing his last lesson, has not been heard by the committee; and the above quotation has been slipped by.

In Newburyport, a city not differing much in size from Haverhill, with many similarities, with works costing \$314,374.86, — much less than the cost of the Haverhill works, — with 936 consumers, and a tribute from the city of \$6,000 for fire-purposes, and for other public purposes a sum equal to the whole amount of the company's taxes, the rates are admitted to be greatly in excess of those here. A comparison here is fair. With a similar plant of certainly much less cost, and with so large a contribution, it would seem that the rates should be lower. It is well understood, by those *practically* acquainted with water-works, that rates are based, everywhere, upon a standard as nearly common as can be secured.

In Haverhill, the charge for each horse and carriage, with water, including hose for washing carriages, in stable, is \$3. A hose is almost indispensable, and is generally used in a respectable stable. In every other instance, so far as known, the use of hose is not included in the first charge; and the rates are as follows : —

		Each additional horse.	Hose.	Total.
Holyoke,	\$2 for each horse,		\$3.00	\$5.00
Concord,	2 " " "		3.00	5.00
Taunton,	4 " first horse,	(\$1.50)	5.00	9.00
Springfield,	4 " " "	(2.00)	5.00	9.00
Lawrence,	3 " " "	(2.00)	2.50	5.50
Lowell,	4 " " "	(2.00)	3.00	7.00
Lynn,	5 " " "	(3.00)	4.00	9.00
Brockton,	4 " " "	(2.00)	6.00	10.00
Malden,	5 " " "	(3.00)	3.00	8.00
Cambridge,	5 " " "	(3.00)	5.00	50 cts. for each additional horse. } 10.00 8.00
Newton,	5 " " "	(3.00)	3.00	
Lewiston,	3 " " "	(3.00)	2.00	5.00
Newport,	8 " " "	(4.00)	8.00	\$3.00 for each additional horse. } 16.00 16.00
Newburyport,	8 " " "	(4.00)	8.00	
Haverhill,	3 " " "	(3.00)	no charge,	3.00

The last three are private companies.

It has been learned, by examination of the list of water-takers in Haverhill, that the average of the families is four, and not the number six, which has been used ; but the comparison will be made in as many aspects as possible.

It is important to remember, that, in other places, the family-rate is limited, generally, to the use of one faucet. It rarely happens now, except in the most ordinary dwellings, that more are not used. This is a charge not made in Haverhill ; and family-takers are not limited in the number used, or the basins or sinks. This must not be lost sight of. When a charge in a family in Haverhill reaches \$25, that price is not exceeded, no matter how many faucets, bath-tubs, water-closets, or other uses, there may be in the dwelling ; and it also includes stable, with horses, hose for the same, and hose for garden and washing windows. (The use of hose is restricted.) It is alleged that a charge of this kind is not known in Haverhill, but the slightest effort would have brought this fact to the attention of the active petitioners. A charge so moderate as this is not known anywhere else. No charges are made for a second water-closet or bath-tub, nor for self-closing urinals, usually placed in offices and stores in connection with a water-closet ; nor for water for steam-heating in dwellings, although they appear as items on the schedule referred to. This latter charge appears to be made in many places, and ranges from \$1 to \$5. All of these items of charge are rigidly adhered to everywhere else.

The comparative annual charges for a family, without regard to the number of persons, or number of faucets, bathtubs, sinks, or water-closets, including stable, and hose for stable and garden, are as follows:—

Cambridge	\$31.00
Lynn	34.00
Lawrence	32.00
Taunton	31.00
Newton	33.00
Malden	28.00
Lewiston	30.00
Brockton	30.00
Portland	40.00

When this sum is reached in Portland, a special rate is charged: and, on inquiry at the office from the clerk in charge, it was learned, that, when they get as high as forty dollars, “they squeeze all they can get out of ’em;” and all who are personally acquainted with the business habits of the vice-president of the company, will believe, that, after the lemon is squeezed, there is not much juice left. Most of our older citizens will remember, that, in a land-squeezing operation with the city, not even the seeds were left.

Salem	no family-rate.
Lowell	“ “ “
Manchester	“ “ “
Concord	“ “ “
Bangor	“ “ “
Springfield	“ “ “

Rates according to schedule; but in detail these charges are much in excess of Haverhill.

Newburyport	\$68.00
Newport	93.00
Haverhill	25.00

Taking families in moderate circumstances, who have no expensive fixtures in their dwellings, comparisons will be made. Many families live here in double tenements; and in such cases, as is well known to many of the petitioners, they have the option of paying six dollars for a family, without limit as to persons, or the schedule-rates. This practice is uniform, and has always prevailed. In all cases, it includes any number of faucets, sinks, and washbowls. In other places,

these seem to be treated as luxuries, and charged for accordingly. In tenements of two or more families, where there is a water-closet for each, the proprietor paying for the same, the family-price is nine dollars, and always has been.

In single dwellings for families of six, the rates are, —

In Lawrence, one sink and basin	\$5.00
each additional person . . . . .	.50
“ “ sink	1.00
“ “ basin . . . . .	.50
Lowell, two sinks and two basins	6.00
each additional person . . . . .	.50
“ “ sink	1.00
“ “ basin . . . . .	.50
Newton, first faucet	6.00
each additional faucet	2.00
Lynn, first faucet	6.00
each additional faucet	2.00
Cambridge, first faucet	5.00
each additional faucet	2.50
Brockton, first faucet	6.00
each additional faucet	2.00
Taunton, first faucet	5.00
each additional faucet	2.00
Malden, first faucet	6.00
each additional faucet	2.00
Newburyport, first faucet	8.00
each additional faucet	3.00
Portland	12.00
and valuation of property, probably making it twenty dollars on an average.	
Newport, first faucet	9.00
each additional faucet	3.00
Lewiston, one faucet	5.00
additional faucets, special terms.	
Haverhill, without regard to the number of faucets, sinks, basins, or set washbowls	8.00
Generally hot and cold water faucets count as one.	

By this method, the revenue in the above places is greatly in excess of Haverhill: for, in Haverhill, the service is obviously much more liberal; as there are not twenty-five families, coming under this schedule of rates, to wit, \$8, which pay the amount stated. If the rates are so arranged that they may be increased by adding a sum for each faucet above one, the price for water for a family will be affected in a marked degree, and the aggregate income largely increased.

The number six was taken because this number was selected by the petitioners, and the company is willing to meet them on their chosen ground. But practically, in Haverhill, the average family-rate, on this basis, is six dollars.

But it is in the following comparison that the rates will be found which affect the average citizen of moderate means.

Tables are here presented for six persons in dwellings containing fixtures which very many families possess, the number of which is increasing yearly:—

Lawrence.	Two basins and two sinks	.	.	.	.	.	\$6.50
	Each additional basin	.	.	.	.	\$0.50	
	Each additional sink	.	.	.	.	1.00	
	First water-closet	.	.	.	.	.	4.00
	Each additional water-closet	.	.	.	.	.	1.50
	Slop-closet	.	.	.	.	.	2.00
	Heating-apparatus	.	.	.	.	.	1.50
	Bath-tub	.	.	.	.	.	3.00
	Each additional bath-tub	.	.	.	.	2.00	
	Total	.	.	.	.	.	<u>\$18.50</u>
Lowell.	Two basins and two sinks	.	.	.	.	.	\$6.00
	Each additional one a charge.						
	First water-closet	.	.	.	.	.	4.00
	Second water-closet	.	.	.	.	.	2.00
	Bath-tub	.	.	.	.	.	3.00
	Each additional bath-tub	.	.	.	.	\$1.00	
	Slop-closet (special).						
	Heating-apparatus	.	.	.	.	.	2.00
	Total	.	.	.	.	.	<u>\$17.00</u>
Lynn.	Two faucets	.	.	.	.	.	\$8.00
	First water-closet	.	.	.	.	.	5.00
	Second water-closet	.	.	.	.	.	3.00
	Slop-closet (special).						
	Heating-apparatus (special).						
	Bath-tub	.	.	.	.	.	5.00
	Each additional bath-tub	.	.	.	.	\$3.00	
	Total	.	.	.	.	.	<u>\$21.00</u>
Springfield.	Dwelling	.	.	.	.	.	\$8.00
	First water-closet	.	.	.	.	.	4.00
	Second water-closet	.	.	.	.	.	2.00
	Heating apparatus, no charge.						
	Slop-closet (special).						
	Bath-tub	.	.	.	.	.	4.00
	Each additional bath-tub	.	.	.	.	\$2.00	
	Total	.	.	.	.	.	<u>\$18.00</u>

To this should be added a rate based upon the valuation of property, a method peculiar to Portland.

Haverhill. Single dwelling with six persons. Water for dwelling, without regard to faucets, bowls, or sinks	\$8.00
First water-closet	5.00
Second water-closet, no charge.	
Slop-closet, no charge.	
Heating-apparatus, no charge.	
Bath-tub	3.00
Second bath-tub, no charge.	
Total	<hr/> \$16.00

This shows a rate for Haverhill far below the other cities. But there are very few cases where the first item is charged, namely, a charge based upon a family of six.

But with families occupying double houses, or where there are two or more families occupying the same house in tenements arranged for them, the fairness and cheapness of the rates are evident. In such cases, the family-rate for the above fixtures, exclusive of water-closets and bath-tub, and without regard to the basins, would be, \$6.00; with water-closets, \$9.00; with bath-tubs and water-closets, \$12.50.

Recapitulated we have, —

Lawrence	\$18.50
Lowell	17.00
Lynn	21.00
Springfield	18.00
Taunton	17.50
Brockton	19.00
Malden	20.00
Cambridge	18.00
Newburyport	31.00
Newport	32.00
Portland, exclusive of valuation	26.00
Haverhill, single dwelling, six persons	16.00
“ “ “ average family-rate	13.00
“ double “ without water-closets or bath-tubs	6.00
“ “ tenement with water-closets, each	9.00
“ “ “ “ and bath-tubs, each	12.50

The uniformity of the rates of most of these places is noticeable, and the natural inference is that rates are fixed without regard to the cost of the supply. For in the case of Malden, where the water flows by gravitation, the charge is twenty dollars, a rate higher than in some other places.

Take the aggregate income for further illustration, and the contrast appears more striking. The gross income of Cambridge from water-rates in 1883 was \$179,361.89. Her population is about fifty-two thousand, or a little more than double that of Haverhill; and the income is much more than four times as much as the gross income from water-takers in Haverhill. In Portland, with less than twice the population of Haverhill, the gross income is over \$130,000, or more than three times the income of the Haverhill company.

RATES IN HAVERHILL FOR PETITIONERS COMPARED WITH
RATES OF OTHER PLACES.

Of the petitioners, the following would pay in all of the places above mentioned the highest family-rates for their own dwellings, and in each case a sum higher than the highest family-rate in Haverhill (\$25). See p. 26.

W. R. Whittier,	A. A. Sargent,
James R. Nichols,	John B. Nichols,
J. J. Marsh,	C. W. Chase,
R. Stuart Chase,	J. P. Gilman.

What they pay in Haverhill, will appear in the following table. Also what they would be compelled to pay by the Portland rates, if it could be "squeezed out of 'em." This estimate is absolutely correct.

Haverhill Rate.	NAMES.	Portland Rate.
\$18.00	Warner R. Whittier	\$69.88
20.00	James R. Nichols	69.00
20.00	J. J. Marsh	88.75
13.00	James E. Gale	34.00
22.00	R. Stuart Chase	73.50
22.00	A. A. Sargent	68.00
15.00	D. W. Holden	34.00
18.00	John B. Nichols	52.50
22.00	C. W. Chase	51.00
22.00	John P. Gilman	63.00

Considerable effort has been made to ascertain fully as to the works at Lewiston; but, for some inexplicable reason, it has been impossible to get more than the schedule and a letter from the superintendent, which says he has no copy of any report which would give any information about the

works. But enough has been learned from these two sources to call attention to the adroit methods used in making a comparison for your instruction. The impression sought to be conveyed, was that the cost of the works was small, namely, \$297,000, and that the water-rights were not of much account. The superintendent writes that the entire cost of the works was \$500,000. The water is pumped by water-power, which is inexpensive. It appears by the schedule of rates, that some charges are higher than here, particularly the family-rate above referred to, of \$30. But it is more significant to learn that the city pays to the company a considerable sum for water for public purposes, the fire-hydrants alone paying \$40 each; and \$5,000 each year is raised by taxation for the sinking-fund. By a letter in the possession of the committee, but which was not read by the petitioners, it will be learned that last year Lewiston paid \$5,600 for fire-hydrants, \$5,000 for construction, and \$5,000 for sinking-fund. To this must be added the amount paid for water for other public purposes. It is safe to say that the total would be \$18,000, all of which was paid by taxation, and should be charged to cost of water. So that, in Lewiston, taxation more than makes up for any apparent difference in rates.

COMPARATIVE STORE-RATES.

The rules, as practically enforced, bring the rates for stores very low. If examination is made of the rates of any store in Haverhill as actually paid, and then the rates for the same service in other places, the charges in Haverhill will be found as low as in any place, and below most of the tariffs. They are made uniform, and are controlled as nearly as experience will guide, by the probable amount of water consumed. A store generally pays five dollars, with five dollars for a water-closet; where there are very many persons employed, the rate is made accordingly; and, where hose and other fixtures are used, the rates are added. In manufacturing establishments and workshops the contrast is more marked. In many places, meter-rates govern; and this company is always ready to put them in. Lowell, Lawrence, and Springfield are taken, because they offer similar conditions; namely, manufactories and workshops filled with men. It is not possible to compare with Lynn, because the water in such cases is taken at meter-

rates. A contractor's shop will serve for as fair a standard as any. Take the shop of Mr. Alderman Frost. He employs a hundred men.

By the Lowell rates he would pay	\$100.00
“ “ Lawrence rates he would pay	100.00
“ “ Springfield “ “ “ “	75.00
“ “ Haverhill “ “ pays	25.00

HOSE.

The unfair statement of this subject by the petitioners was adroitly contrived, and is to be condemned without qualification. It is classed as “Hose for sprinkling streets, and garden use.” It is enough to say that this was not honestly put, and must have been known. Every one of the petitioners knows that the charge for hose for streets and for gardens are separate charges. They know that the price for garden-hose is five dollars, and not ten dollars, because they have regularly paid it. Dr. Nichols and Mr. John P. Gilman, near neighbors, using a garden-hose, had no right to misrepresent the facts. Inasmuch as the latter has, nearly every summer, kept his hose running all day during the hot weather, it may have occurred to him that he *ought* to pay more; and we think he ought. If he thinks the water in Haverhill is running to waste, a little economy practised at home would show a disposition to assist in saving water.

The rate for hose for sprinkling streets is a special rate, and is recognized as high. But it is not desirable that hose should be used for this purpose; and it is discouraged, in order that the greater and more general benefaction of sprinkling by the water-carts may go on. This is a purely individual enterprise, where the municipality does nothing; and the company does not feel that it would be justified in any competition. Furthermore, this \$10 rate has never been collected by the company: and the use of garden-hose for occasional sprinkling the streets where the water-carts do not go, has been thus far tolerated, perhaps unwisely; as such use of water is extravagant, and the petitioners do not seem inclined to leniency.

CITY WATER-RATES.

Here, as in all of the recitals of figures submitted to you by the committee of the petitioners, the items have been so garbled and arranged as to mislead the reader. The cheat here is, that the receipts are made to read so that the inference is, that \$2,045.38 was received for *water*.

The amount actually paid for water in 1883 was \$1,233, and not \$2,045.38. The remaining items on the list given on a previous occasion were not for water, as could have been easily learned by inquiry. Here are items of money paid for work hired by the city for repairs done to its own hydrants, and for labor of various kinds, deliberately inserted, and called "remarkable water-taxes." The sense of fairness seems to be entirely lost to this man. The item of \$400 was at a former time carefully explained to these petitioners when on their regular pilgrimage to the State House; but with singular obtuseness, or bluntness of conscience, it is still charged to "water." It is interest on a sum of money advanced and expended by the company for a special purpose, and by virtue of a contract in writing duly executed, voluntarily entered into by the city, and sought at its own motion, which the city can terminate at any time by carrying out its provisions. The contract was highly favorable to the city, and was made when certain improvements were contemplated, and was a substitute for a project of great expense; and, in consequence, there was a saving of at least \$5,000 in money. The city has had the continuous use of the pipes and water, and the arrangement has been an advantage to the city.

The exact amount which will be paid by the city for *water*, on account of regular water-supply, and with the present fixtures, in the year 1884, is as follows: —

Water for street-troughs	\$410.00
“ “ drinking-fountains	25.00
“ “ City Hall	50.00
“ “ Library	25.00
“ “ engine-houses	70.00
“ “ city-stables	33.00
“ “ High School	100.00
“ “ Winter-street School	50.00
“ “ Portland-street School	50.00
“ “ Currier School	50.00

Water for Broadway-street School	\$10.00
“ “ School-street School	50.00
“ “ John-street School	15.00
“ “ Old High School	20.00
“ “ all other schools	55.00
	<hr/>
	\$1,043.00

The rates for the schoolhouses are nominal. The company would willingly supply them at meter-rates, if the city insisted. Only one of these items has been criticised; namely, that relating to the High-school building. The critic is probably not aware that the building is crammed with inmates. Besides the High-school attendance, there are two grammar schools and a large primary school there. The evening and evening-drawing schools occupy the building, and the frequent night sessions of the city school committee are held at the same place. There are a great many water-closets in the building. In Lowell, where the water is furnished to the High School at meter-rates, with no possibility of consuming as much water as in Haverhill, the cost per annum is \$100 for water, actually measured, and paid for at standard rates. This trifling sum, paid to the company, is not without its corresponding and balancing credit received. It is not all on one side. A corporation tax is collected by the Commonwealth, and a large part of it credited to the city on account of its proportion of the State tax; and, also, the improved property and machinery of the water-company contributes its share of local taxation. This year there will be paid about \$4,500 in taxes; and the city will receive much more than it will pay back, on account of the existence of the company. Thus the revenue regularly received is more than the amount paid to the company, and the cost of water is virtually nothing. The locality of the owners of the property does not affect the company's taxes. Their property here is subject to the local assessor: and the shares of the company are taxed by the State in the same way as shares of railroad, gas-companies, and other corporations; and Mr. Ward B. Haseltine, so unjustly traduced with the other individuals in the company, is mulcted in taxes for exactly as much as Mr. James H. Carleton, who is a resident proprietor, and, in addition, is assessed at home on account of this investment.

Nor is this all, for the balance of credit for the company is further increased by the

FIRE-SERVICE.

The city of Haverhill is to be congratulated for the present water-service for fire at her command. It is simple in construction, and superbly efficient in execution. Connected with the high service of the company, — a section of the works successfully operated from the first, and an ever-present answer to the dismal carping and ignorant prophecies of this new light on water-questions, — it arouses the admiration of every appreciative person who witnesses its operation. There is probably no system exactly like it. Unconnected with any part of the aqueduct system, the whole power of an immense volume of water rushing through the large mains can be directed with precision and irresistible effectiveness. It supplies the place of a number of costly steam fire-engines. It is considered a most remarkable arrangement for its intended purposes. With the adoption of the plan, and its completion, came the liberal donation of the company of its conduit, bringing the water to the main, the constant pressure night and day of this powerful stream, the services of men, and the power of engines to maintain it through any demands for its use. To have possessed all this would have cost the city many thousand dollars of outlay over and above the price for distribution-pipes, on account of conduits, pumping-station, engines, and the necessary complements, and an annual expense of a large sum to support it. By the liberality of the company, the whole business interest of the city is thus amply protected, without any yearly expense of taxation or appropriation; and, beyond the repairs to the pipes of the city, there is absolutely no burden to be provided for. It is a gift cheerfully bestowed; and it is not creditable to the petitioners, that, in their zeal for points of attack, they have only churlish and abusive words, and cannot utter the faintest whisper of commendation, — something thus far confined to the lips of strangers.

TAXATION AS AN INCIDENT CONNECTED WITH RATES.

A person who pretends and announces, that, by careful examination and study of water-companies for a period cover-

ing a large share of the length of life allotted to man, he has mastered their peculiar details and mysteries, cannot have overlooked the relations of the tax-payers to municipal water-works, and the substantial influence of taxes upon water-rates. He pretentiously comes before you, equipped with information obtained by extensive investigation at home and abroad, and ostentatiously presents the heaped-up documents of proof. It would seem that the most heedless observer would have noticed that taxation was an important factor. He entirely ignores the burdens of taxation annually borne by cities, on account of deficiencies in water-rents, to meet interest, maintenance, construction, water for public purposes, etc. Here is the real mouse in the meal. A candid spirit, unless animated by the bitterest hostility, would have admitted it; and it is impossible to suppose that the omission was accidental, or was overlooked by this ardent student of water-theories and water-literature. The conviction is unavoidable, that the subject has been purposely and dishonestly avoided, in the hope of failure of detection, and the intention of leading the public astray, or that he has but a superficial knowledge of the contents of the documents he offers which quite unfits him to advise the tax-payers in these matters. Throughout, there has been a Mississippi of delusion, with but a rivulet of candor and fairness. It is by just such incapacity, and such reckless assumptions as these, that municipalities have been induced to plunge into extravagant and costly experiments, and in consequence, like the beautiful city of Elizabeth, N.J., have become bankrupt and a reproach, their real estate hardly worth the taxes; private property has been taken to satisfy the public creditor, and the county sheriff has supplanted the tax-collector; and in place of industry and thrift are vacant houses and stores, and impassable streets; the decayed public works alone remaining, out of which reckless speculators had enriched themselves. It is submitted, however, that more could not have been expected of one, who, in a public place, offers a six-months' water-bill which suits his purpose, and deliberately suppresses the bills for the balance of the year which would disclose the truth. Another striking instance will appear farther on.

It has been heretofore shown, that the water-departments of most cities and towns annually present to those who must

pay the bills, an increased indebtedness. Every year the balance is against them ; and, for a long time to come, it is unquestionable that the public charge must be a constant drain on the tax-payer. The increase to the debt is kept down by the direct appropriations, which assist in making the volume of the income. Every year the Legislature is called upon to provide special legislation to enable cities and towns to make an additional water-loan. In these places, the water-bill is found upon the books of the water-registrar and the tax-collector. The additional load is by no means light, and bears, not alone upon those who receive the immediate benefit of a water-service, but upon the non water-taker as well, whether they reside in some secluded spot or outlying districts not easily accessible, as in places like Haverhill, where there are many inhabitants of the parishes and outlying districts who cannot enjoy the facilities offered to those in the more populous centre. In making appropriations for public improvements, it would be well to remember there are few places in New England of the size of Haverhill, where the property is so evenly distributed, and the aggregate wealth so small. With a valuation of only \$13,000,000, a tax of \$100,000 would be more of a hardship than a tax of \$200,000 in our neighboring cities of Lawrence, Lowell, and Salem. Appropriations are made for many objects connected with the water-supply, and the incomes are largely fictitious because of the large amounts paid to itself by the city. This is a method of merely transferring from one pocket to another the money which first is taken from the tax-payer. If the entire income was real, and every thing spent was taken from the income, in order to be self-sustaining, the rates would be, of necessity, much higher than at present.

How this is done, and what a city really pays to itself, may be seen by the following explanation and example. There are paid to the water-department large sums for water for public purposes, particularly in the fire-department. In Haverhill, water for fire-service costs nothing. In Manchester, each fire-hydrant is charged \$60, making an item of \$20,940 ; in Taunton, \$30 per hydrant ; in Concord, \$50 per hydrant ; in Lewiston, \$40 per hydrant ; in Cambridge it has ranged from \$10 to \$30. In Springfield, \$20.

By the auditors' report of the city of Cambridge in 1883,

Cambridge appropriated and raised by direct taxation \$24,687.59, including four per cent on a note of the city for \$200,000, added to the sinking-fund, for water for public uses; and this sum, exclusive of the interest, was credited to income. By the addition of the new supply from Stony Brook, costing nearly \$1,000,000, the annual charge will be increased \$35,000. By careful examination, it is learned that sums were raised as follows:—

Lowell, each year by direct taxation, about . . .	\$80,000.00
Fall River, a large sum each year.	
“ “ in 1883	54,000.00
Lawrence, “	97,848.63
And each year not far from that sum.	

Brockton, in 1884, appropriated \$5,000 for public service; and this sum was more than one-half of the water-income. In Newton a large sum is raised in the same way. In some of these cases, an appropriation is included for the water sinking-fund; but the increased debt keeps pace with the sinking-fund. This will be found to be a general course. In the case of Salem, the rate per thousand to make up the deficiency required was \$3.25, which, with the difference in valuation, would be, in Haverhill, at the rate of \$6.50 per thousand; and a table below is calculated on that basis.

Of course, if the works could be had for nothing, or a mere nominal cost, the case would be very different. But no one fancies for a moment that the Aqueduct Company will fail to receive what its property is worth. It is idle and puerile nonsense to say that any thing like the basis suggested can or ever will be adopted.

A very careful and precise computation has been made of the effect on our present taxation, in case there should be added to the regular appropriation either of the sums referred to below; and there are submitted tables to show the result. They include individuals living in or near the centre of the city, and also living at a distance, or in the parishes, and who do not pay for water. The tables indicate what their whole water-bill *now* is for *all* of their property, including their personal rate and the rates of their tenants, and what amount would be added by taxation *for water*. The cities selected are those used for comparison by the petitioners, and the tables illustrate what the effect would be upon the annual

taxes if it were necessary to provide by taxation any considerable sum for water-purposes.

(1) The total levy of the city of Haverhill in 1883 was \$199,500 ; tax-rate, \$17.48. If this rate were increased \$6.50 per \$1,000, the tax-rate would be \$23.98.

WATER-TAKERS.

Now pay for water. — Total	NAMES.	Increase by taxa- tion for water.	Payments with tax added.—Total.
\$40.00	James R. Nichols	\$461.50	\$501.50
441.00	J. J. Marsh	747.50	1,188.50
179.00	J. P. Gilman	563.03	742.03
64.00	A. A. Sargent	432 25	496 25
418 00	J. B. Nichols	1,040.00	1,458.00
22.00	C. W. Chase	191.75	213.75
500.00	A. P. Jaques & Co.	625.74	1,125.74
281.00	S. D. Maynard	269.42	550.42
265.00	Richard Webster	342.52	607.52
221.00	C. W. Chase & Co..	361.49	582.49

NON WATER-TAKERS.

	NAMES.	Addition to present tax by taxation on account of water.
Pay nothing for water.	Gyles Merrill	\$117.00
	C. N. Hoyt	57.20
	William D. Brickett	19 50
	Daniel Brickett	13.00
	James D. White*	172.25
	Jeremiah Bennett †	97.50
	O. T. Emerson	26 00
	Daniel Webster	26.00

* \$18 on tenement in city.

† \$35 on tenement in city.

(2) If \$80,000 were paid by tax, as in Lowell, the rate would be \$24.52, an increase of \$7.04; and total levy \$279,500.

WATER-TAKERS.

Now pay for water. — Total.	NAMES.	Increase by taxa- tion for water.	Payments with tax added.—Total.
\$40.00	James R. Nichols	\$499.84	\$539.84
441.00	J. J. Marsh	809.60	1,250.60
179.00	J. P. Gilman	609.80	788 80
64 00	A. A. Sargent	468.16	532 16
418.00	J. B. Nichols	1,126.40	1,544 40
22 00	C. W. Chase	207 68	229.68
500.00	A. P. Jaques & Co.	677 71	1,177.71
281.00	S. D. Maynard	291.80	572 80
265 00	Richard Webster	370.98	635.98
221 00	C. W. Chase & Co.	391.52	612.52

NON WATER-TAKERS.

	NAMES.	Addition to present tax by taxation on account of water.
Pay nothing for water.	Gyles Merrill	\$126.72
	C. N. Hoyt	61 95
	William D. Brickett	21.12
	Daniel Brickett	14.08
	James D. White*	186.56
	Jeremiah Bennett†	105 60
	O. T. Emerson	28.16
	Daniel Webster	28.16

* \$18 on tenement in city.

† \$35 on tenement in city.

(3) If \$97,848, the sum raised in Lawrence by a tax, should be added, the total levy would be \$297,348; and the total rate would be \$26.18, an increase of \$8.70.

WATER-TAKERS.

Now pay for water. — Total.	NAMES.	Increase by taxa- tion for water.	Payments with tax added.—Total.
\$40.00	James R. Nichols	\$617.70	\$657.70
441 00	J. J. Marsh	1,000 50	1,441.50
179.00	J. P. Gilman	753.59	932 59
64.00	A. A. Sargent	578.55	642 55
418.00	J. B. Nichols	1,392 00	1,810 00
22.00	C. W. Chase	256.65	278 65
500.00	A. P. Jaques & Co.	837.52	1,337.52
281.00	S. D. Maynard	360.61	641.61
265 00	Richard Webster	458.45	723.45
221.00	C. W. Chase & Co.	483 85	704.85

NON WATER-TAKERS.

	NAMES.	Addition to present tax by taxation on account of water.
Pay nothing for water.	Gyles Merrill	\$156.60
	C. N. Hoyt	76.56
	William D. Brickett	26.10
	Daniel Brickett	17.40
	James D. White *.	230.55
	Jeremiah Bennett †	130.50
	O. T. Emerson	34.80
	Daniel Webster	34.80

* \$18 on tenement in city.

† \$35 on tenement in city.

THE WISDOM OF CAMBRIDGE. — A BRILLIANT EXAMPLE!

It is asserted that Cambridge has acted wisely ; and so far as that case has been stated to you, for the purposes of example, this practical illustration will be examined. Clearly, the gentleman who brought out this instance as a case which should influence you, has here demonstrated, either that he has been a superficial reader, or is an incompetent aqueduct expert. This was outrageously contrived to delude. The statement was, that, first assuming a convenient basis, if the city had owned the aqueduct, "it would have placed in the city treasury \$320,000 in clean money, — a sum sufficient to have paid for the aqueduct plant, and discharged more than one-half of the present city debt."

"These results will astonish a large majority of water-takers, and all who have given the important matter of the water-supply no special study or consideration ; but it is no more than what has been actually accomplished by the city of Cambridge. In 1865, two years prior to 1867, when Haverhill should have taken control of the aqueduct, Cambridge bought of a private company the aqueduct that supplied that city with water, and paid for it \$291,400. Since the purchase, this amount has been paid from the surplus-revenue fund of the water-supply, and \$55,000 ; and the city had invested in securities Dec. 1, 1883, additional sinking-funds amounting to \$696,896.95. This is an instructive record. Cambridge has acted more wisely than Haverhill, as regards its water-supply " (pp. 33, 34, of argument).

The obvious intent was to attach a meaning and conclusion to this statement, that Cambridge had purchased of a private company its privilege, had thus secured an aqueduct, had paid for it out of the "surplus revenue," together with an additional sum paid from the same source, and had put aside a large sinking-fund, with the presumption, that this latter sum was a saved earning, to be used in extinguishing the municipal debt. It had all come from the "surplus revenue," had wiped out the cost, which appeared to stand as entirely paid, and something handsome had been accomplished besides. It was a most adroit perversion of facts, and suppression of essential and vital data. Allowed to go without comment, and left to stand undisputed, the plain inference would be as pointed out. The deception was well-nigh perfect.

The exact facts, fortunately, can be easily verified; and all the necessary official documents are at hand for the committee.

In 1865 Cambridge bought an aqueduct, then much inferior to the present Haverhill system, with twelve miles of pipe (Haverhill has thirty), for \$291,480. The city held a mortgage on it for \$50,000. After the purchase, the rates were immediately raised by the city. In 1869 the cost of the works amounted to \$828,100.69, in 1872 to \$1,030,384.86; and Dec. 1, 1883, the total cost of the Cambridge Aqueduct was \$1,751,344.97, with a balance of debt unprovided for and yet to be paid of \$926,603.50 above the value of the sinking-fund. Very large sums of money had been raised during this time for various water-purposes. The sinking-fund had been largely accumulated by a forced process, as the law required a certain sum to be added to it yearly. The amount paid by the city for public purposes has varied; but it is believed that \$25,000 would be less than the annual average, and this average would make the sum of \$475,000 in nineteen years paid by taxes to make up an income. The sinking-fund Dec. 1, 1883, amounted to \$496,896.95; but there was to be added to it a note of the city for \$200,000, with interest at four per cent, principal and interest to be raised from taxes, but the note not to be paid in whole or in part until every other means of payment fail. No jugglery of words can affect the facts once brought out; and, in a pro-

ceeding like this, the abuse of an example in such a manner as this cannot be too strongly condemned. The revelation of the facts as they exist in the instance of Cambridge does not warrant the use which has been made of this brilliant example.

A table similar to those preceding is submitted, illustrating the effect on water-rates by taxation, if the city paid to the Aqueduct Company the same amount which is paid by the city of Cambridge for water for public purposes.

If this sum was \$24,687, the amount raised in Cambridge by taxation by the public rates of 1883, the total levy would be \$224,187: the total rate per \$1,000 would be \$19.66, an increase of \$2.18. This is the smallest amount used for a comparison, and it is very probable that a like amount under the most favorable conditions would be required.

WATER-TAKERS.

Now pay for water. — Total.	NAMES.	Increase by taxa- tion for water.	Would pay for water. — Total.
\$40.00	James R. Nichols	\$154 78	\$194 78
441 00	J. J. Marsh	250 70	691 70
179 00	J. P. Gilman	188.83	367.83
64.00	A. A. Sargent	144.97	208.97
418 00	J. B. Nichols	348 80	766.80
22.00	C. W. Chase	64 31	86.31
500 00	A. P. Jaques & Co	209 86	709.86
281.00	S. D. Maynard	90.36	371.36
265 00	Richard Webster	114.87	379.87
221.00	C. W. Chase & Co.	121.24	342 24

NON WATER-TAKERS.

	NAMES.	Addition to present tax by taxation on account of water.
Pay nothing for water.	Gyles Merrill	\$39.24
	C. N. Hoyt	19.18
	William D. Brickett	6.54
	Daniel Brickett	4 36
	James D. White*	57.70
	Jeremiah Bennett†	32.70
	O. T. Emerson	8.72
	Daniel Webster	8 72

* \$18 on tenement in city.

† \$35 on tenement in city.

CONCLUSION.

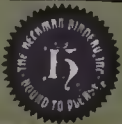
During the period of its existence, the company has not been guilty of any oppressive acts. The checks upon it have been both moral and legal. The right of the city to buy it at any time, and the power of the law of the land, were restraint enough, if any were needed. It has not been its particular mission to encourage other business enterprises, it is true; but that it has militated against the interests or thrift of the city, the citizens of Haverhill will not believe. Obviously, the growth of Haverhill was the prosperity of the company. The plausible story of a petitioner, that he was driven across the river by the company to erect a hat-factory, fails from inherent weakness. When that gentleman sought a bargain, it is perhaps unnecessary to state that he did not give away or lose grasp of the best end of the proposition; and, if he went to Bradford solely to get water cheaper, it is difficult to perceive how water could be taken at less expense from the Merrimack on the Bradford shore than on the Haverhill side. At that time, there was ample room on River Street for factories. Reasons for selfish preference in the course taken are easier given, such as cheaper land, abated or reduced taxes, and railroad facilities.

For about twenty years, out of a life of the company of eighty-two years, the active participants in this hearing have been sedulously engaged in annoying and abusing the individual owners of the company, and fomenting hostility against it. In 1867, 1880, and twice in 1884, the same names and faces, the same lieutenants under the same leader, have been clustered together, making factious contest. During its whole career, there have been no just complaints of wrongs endured or arbitrarily inflicted; and with a drag-net sweeping the community for four months, these zealous enemies do not produce a single poor man with a tale of abuse or oppression, and not a single act is pointed out by which the company has caused the slightest wrong or harm to any citizen in any walk in life. There is no array of complainants here. There is only a small knot of malecontents. Some petty grievances or distorted tales are spitefully recited by this little band of persistent foes, of unsuccessful bargains or personal woes. They are well understood. This is a sufficient reply to the charge that the company has committed such acts, and pursued such

a course, that it has lost the respect of the community where it exists, and which it serves.

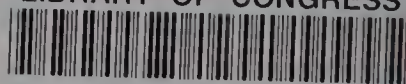
It is believed that the company has demonstrated a course and management giving to the community more liberal and satisfactory service, *with better, purer, and cheaper water*, as a whole, than can be found anywhere else. The company has loyally and honorably respected its franchise, and fulfilled its obligations. If it has violated them, the tribunals of the Commonwealth and the General Court have been open to those who had occasion to seek redress. Although enduring much from anonymous attacks and ambuscades, this is the only responsible indictment which the company has been called to plead to — a presentment indeed faulty throughout, and formidable only for its deceptions and virulence.





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